

II. EXISTING LAND USE PATTERNS

The Colusa Subreach was originally part of a riparian forest that was approximately five miles in width and extended along the floodplain of the Sacramento River. Within this landscape, the river continually meandered and constantly changed its channel location. It annually flooded during the rainy season and overflowed into the nearby Colusa and Butte Basins. The area supported a large and diverse population of wildlife including resident and migratory land animals and birds as well as resident and anadromous fish. The area was populated by Native Americans in a relatively dense pattern though their culture caused minimal impact on the area.

With Euro-American settlement, land use in the Subreach began to change. Over 90 percent of the original riparian forest was cleared, initially for steamboat fuel and lumber and later for agriculture (Golet et al, 2003). The current levee system was constructed in the early 1900's and the existing overflow weirs were added in the early 1940's. The resulting improvement in flood protection stimulated an expansion of agriculture outside of the levees and the riparian forest was soon reduced to the area inside of the levees. With the regulation of the flows afforded by Shasta Dam, additional area inside the levees was cleared for agriculture, resulting in the present pattern of land use in the Subreach.

The conversion of native vegetation to agriculture in Colusa and Glenn Counties resulted in substantial economic and social benefits to the area. The expansion of agricultural activity fueled the growth of towns such as Colusa and Princeton. The development of reliable irrigation systems also increased the range and yield of crops, adding to the prosperity of the area. The local economies in Colusa and Glenn Counties are based upon their agriculture production. The economic impact of these agricultural economies is further described in Chapter V.

The Colusa Subreach extends from levee to levee, from the Princeton Ferry site in the north to the Colusa Bridge in the south. The Planning Area includes approximately 5466 acres of land as well as the Sacramento River, which flows through the Subreach and provides its most dominate feature. More than half of this land is in natural riparian habitat although this is less than ten percent of the larger habitat corridor that originally existed along the river. The majority of the remainder of the Subreach is in agricultural use. There are no urban uses and there is no expectation that the area will be converted to urban use in the foreseeable future. This Chapter summarizes the mapping and analysis of existing land use patterns that was conducted to help provide a technical basis for subreach planning.

A. Existing Land Use

Land use in the Planning Area was determined through interpretation of aerial photography from the 1999 *Sacramento River Aerial Atlas* with supplemental analysis from other available sources and field observation. Data was analyzed as part of a geographic information system (GIS) database. Figure 6 depicts the existing land uses in the Subreach and the estimated historical extent of riparian

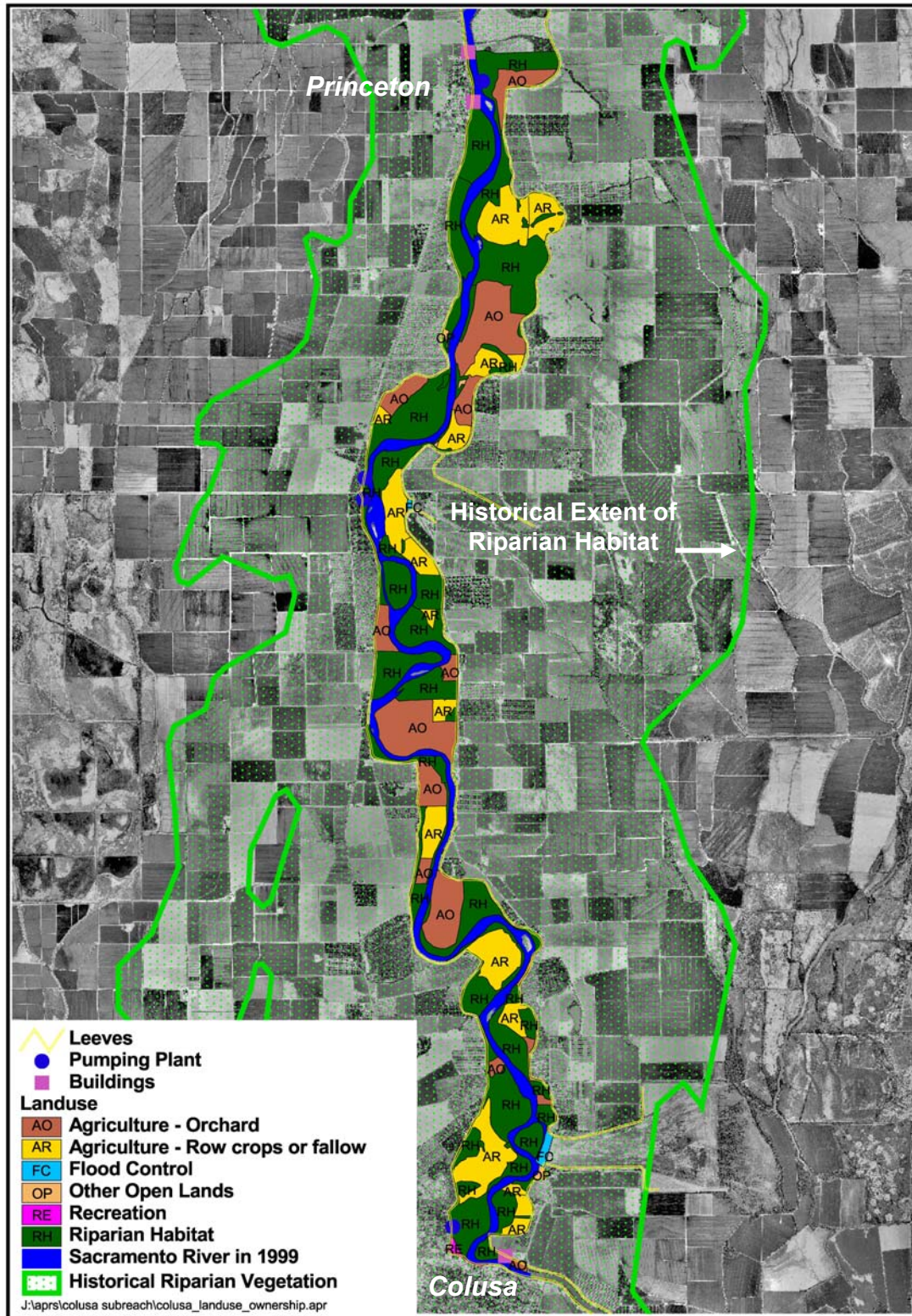


Figure 6. Land Use in the Colusa Subreach

Source: The Nature Conservancy & Greco, 1999

vegetation. The extent of the original area of riparian habitat was determined on the basis of soils characteristics by Steven Greco of UC Davis in 1999. Table 1 describes the existing land uses in the Subreach.

Table 1. Land Use in the Colusa Subreach

Land Use Category	Acres	Percent of Total Area
Agriculture – Orchard	1204	22%
Agriculture – Row Crops or Fallow	1163	21%
Other Open Area	23	0.4%
Riparian Habitat	3031	55%
Flood Control	25	0.5%
Water Supply	5	0.1%
Recreation	14	0.3%
Residential	1	0.1%
Total	5466	

Source: The Nature Conservancy

The following land use categories were used to describe the Colusa Subreach:

Agriculture-Orchard	Land planted to orchard crops
Agriculture-Row Crops & Fallow.....	Land planted to row crops or fallow, open crop land
Other Open Lands.....	Land that is open and not visibly in agriculture, habitat or other use
Riparian Habitat.....	Land that is devoted to riparian vegetation including gravel bars
Flood Control.....	Land devoted to weir structures and open, approaches to weirs
Water Supply.....	Land devoted to irrigation pumping and diversion facilities serving multiple properties
Recreation.....	Land improved for active recreation activities
Residential.....	Land devoted to residential dwellings

All land area figures in this Chapter, and this Report in general, should be considered as approximate because they are not based on a field survey of the Planning Area. They do, however, reflect relatively accurate figures that were derived through GIS analysis of aerial photography. The land areas were measured from the inside edge of the levees and do not include portions of properties that lie under the levees or outside of the levees. The figures also exclude the river surface at the flow rate of approximately 8,000 cubic feet per second, which occurred on the May 24, 1999, the date when the aerial photos for the 1999 *Sacramento River Aerial Atlas* were taken. For these reasons, property areas may not precisely match figures derived from County Assessor's maps or other record sources.

The two principal land uses in the Subreach are riparian habitat and agriculture. Together these two uses represent approximately 98% of the land area in the Subreach. Small portions of the Planning Area, totaling less than two percent of the area, are devoted to flood control water supply, recreation and miscellaneous open areas. Riparian habitat areas occupy about 3031 acres, or 55% of the Colusa Subreach. This compares to 44% habitat in the portion of the Sacramento River Conservation Area (SRCA) between Red Bluff and Colusa (SRCAF 2003). Habitat areas tend to be on lower elevation property that may have been less attractive, or

more expensive to utilize, for agriculture. Habitat areas are commonly in locations that have been within the meandering river channel during the past century.

Agricultural areas are divided into orchard (1204 acres or 22% of the total Subreach area) and row crops (1163 acres and 21% of the area). The percentage of the land devoted to agriculture, 43%, equals the figure for the portion of the SRCA that lies between Red Bluff and Colusa (SRCAF 2003). The orchards are almost entirely composed of English walnuts and prunes. The row crop areas are annually planted to a mix of crops including beans, safflower, wheat and other vegetables and grains.

Approximately 25 acres are devoted to flood control purposes at the Mouton and Colusa Weirs and 14 acres are devoted to water supply purposes at four pumping plants that each provide irrigation water from the river to multiple properties outside of the Planning Area. Approximately 14 acres are improved for recreation use at the Colusa-Sacramento River State Recreation Area and at the Colusa Levee Park, downstream of the Recreation Area. Two residential dwellings also lie along the crest of the levee with small yard areas extending inside the levee. The only building in the Planning Area, other than the small structures at the Colusa State Recreation Area, is a metal storage building that is across the river from Colusa.

B. Land Ownership

Land ownership in the Planning Area was determined through the review of the 2004 Colusa and Glen County Assessor's rolls and Assessor's Parcel Maps. The information was then transferred to aerial photography coverage from the 1999 *Sacramento River Aerial Atlas*. Data was incorporated into and analyzed using the Sacramento River Geographic Information System. Table 2 describes the land ownership in the Subreach and Figure 7 depicts the location of those uses. As noted previously, all acreage figures are unsurveyed and therefore approximate.

Table 2. Land Ownership in the Colusa Subreach

Ownership Category	Acres	Percent of Total Area
Private - Agriculture	2183	40%
Private -Habitat	1696	31%
Private - Other	5	0.1%
Private Conservation-Agriculture	184	3%
Private Conservation-Habitat	185	3%
Public - Habitat	1150	21%
Public - Other	63	1%
Total	5466	

Source: Colusa and Glen County Assessor's Office records

The land use categories were utilized to describe the Colusa Subreach:

- Private-Agriculture..... Land owned by private entities in agricultural use
- Private-Habitat..... Land owned by private entities in riparian habitat
- Private-Other..... Privately-owner land not in either agriculture or riparian habitat
- Private Conservation-Ag..... Land owner by a private conservation organization and devoted to agriculture
- Private Conservation-Habitat.. Land owner by a private conservation organization and in riparian habitat

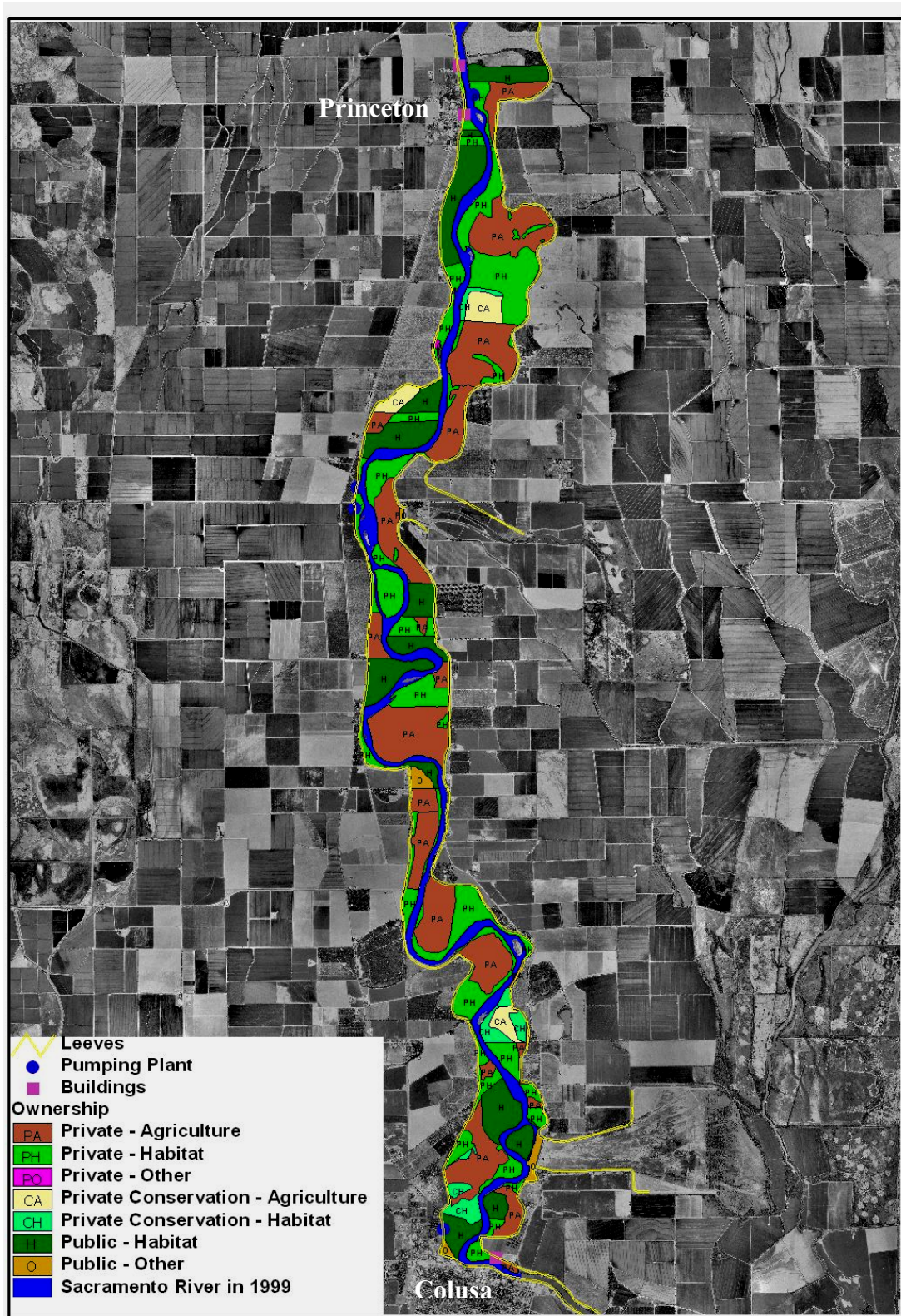


Figure 7. Land Ownership in the Colusa Subreach
 Source: Colusa and Glen County Assessor's Office records

Public-Habitat..... Land owned by a public agency in riparian habitat
 Public-Other..... Land owned by a public agency that is not in
 riparian habitat.

Approximately 78% of the land in the Colusa Subreach is in private ownership and about 22% of the land is in public ownership. The percentage of private ownership is slightly greater than that in the Red Bluff to Colusa portion of the SRCA where approximately 72% is privately owned and 28% is publicly owned (SRCAF 2003). The Private ownership category includes 3,884 acres owned by 78 different owners, of which, 56% is devoted to agriculture, 44% is in riparian habitat and less than one percent is in other miscellaneous uses. A second category of private ownership is Private Conservation, which represents the 369 acres owned by The Nature Conservancy. This land is evenly divided between habitat and agriculture.

Public ownership totals 1,213 acres and it is composed of 95% habitat and 5% other uses including recreation, water supply and flood control. Public agencies managing land within the Subreach include four local agencies, three State agencies and one federal agency. Table 3 list the area the public lands by managing agency and Figure 8 depicts the location of the public lands in the Colusa Subreach. Acreage figures in Table 3 are rounded to the nearest whole number.

Table 3. Public Lands in the Colusa Subreach

Public Agency	Number of Sites	Acres
City of Colusa	1	<1
County of Colusa	2	11
Rec. District 1004	1	4
Maxwell Irrigation. District	1	<1
CA Dept. of Fish and Game	7	905
CA Dept. of Parks and /Recreation	1	95
Sac. & San Joaquin Drainage Dist.	1	161
US Bureau of Indian Affairs	1	37
Totals	15	1213

Source: Colusa and Glenn County Assessor's Offices and The Nature Conservancy

The State of California also holds three conservation easements in the Subreach ,which total 188 acres, that are administered by the Department of Fish and Game. These easements apply to privately-owned property and do not include the right of public access. One of the three sites is entirely in riparian habitat and the easement provides for permanent maintenance of the habitat. The other two easements apply to property that is partially in riparian habitat and these easements include the potential of converting the remaining land to wildlife habitat. Consistent with the Department's policy, these conservation easements are not mapped or located in this Report in order to help protect the property rights of the landowners.

The three conservation easements were purchased in the 1990's from willing sellers for the fair market value of the property rights that were transferred on the basis of competent appraisals. Conservation easements involve the transfer of certain, specified property rights. The landowner retains fee title ownership of the property and all the property rights that are not sold as part of the transaction. The provisions of conservation easements can vary depending on the objectives of the transaction parties. Generally, conservation easements commit the landowner to maintain the

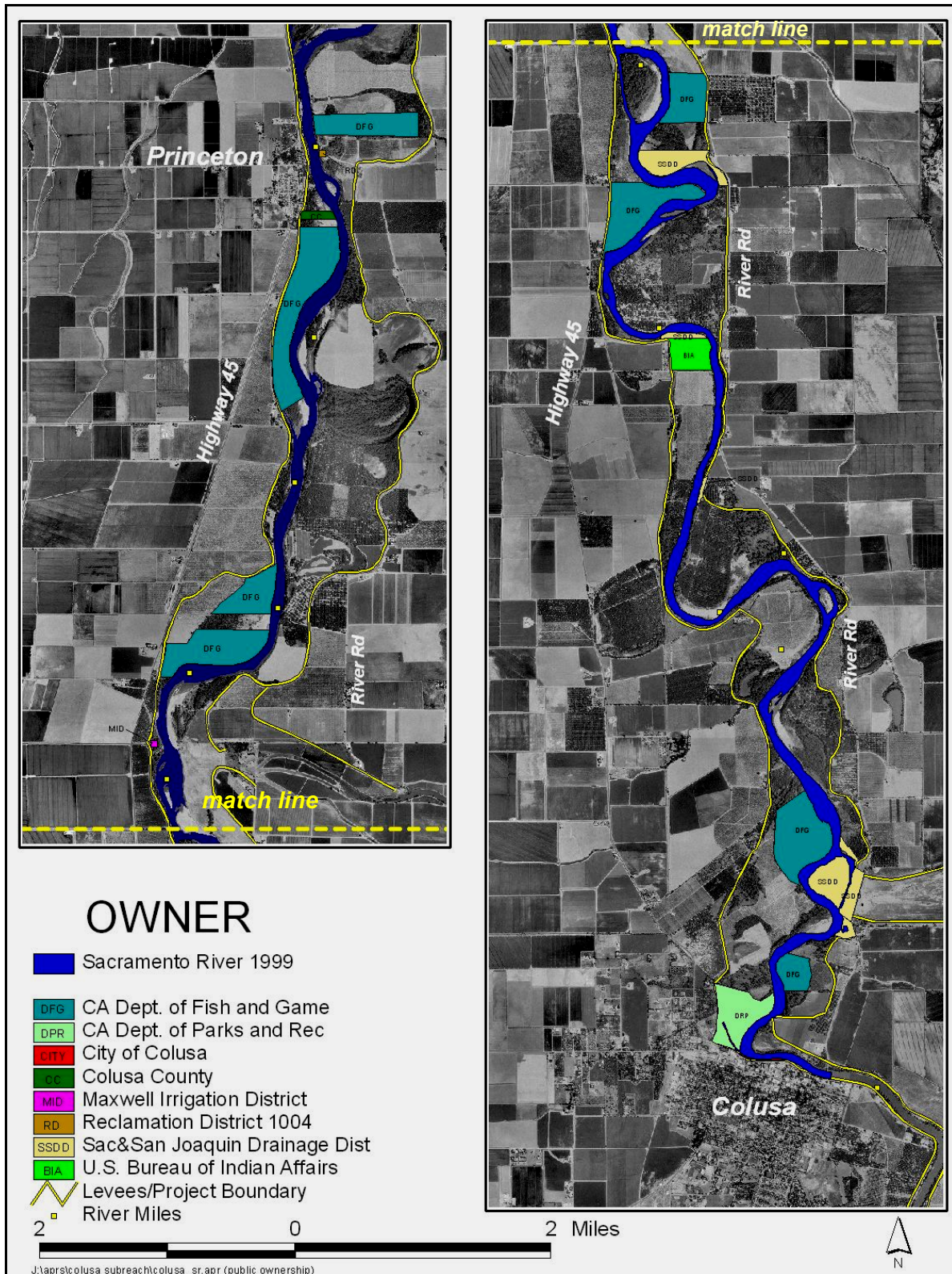


Figure 8. Public Lands in the Colusa Subreach
 Source: Colusa and Glen County Assessor's Office records

habitat value of the subject property. For example, a property that is in riparian habitat would typically be kept in that habitat under a conservation easement. Such easements may also permit continuation of agricultural use, commonly subject to the provision that the land not be developed for more intensive use with a lower habitat value. All transferred rights, which become permanent binding limitations on the fee title ownership, are specified in the easement deed. The holder of the easement is normally given the right to access the property and verify that the easement provisions are being met.

C. Recreation Use and Facilities

Recreation is a common secondary use of the riparian habitat and, to a lesser degree, agricultural areas. The most common recreation uses are hunting and fishing although birding, hiking, camping, boating, photography, beach activities and environmental education occur frequently. Recreation use of private land is subject to the owner's permission and the use of public land is dependant on the use and regulations established by the managing agency. One private property owner near Princeton does reportedly permit public use such as boat launching on a fee basis.

The majority of the public land is specifically open to public use by State law or agency regulations. This includes the approximate 1000 acres managed by the California Department of Fish and Game (CDFG) and Department of Parks and Recreation (CDPR). The small, City-owned Colusa Levee Park is also open to the public. The CDPR land, the Colusa-Sacramento River State Recreation Area, is accessible from public roads and from the river. One of the CDFG sites, the Princeton-East Unit of the Sacramento River Wildlife Area, has public road access. The other six Wildlife Area sites do not have public access rights-of-way and they are accessible only from the river. The remaining six public properties are not specifically managed for public access.

The only substantive recreation improvements in the Colusa Subreach are adjoining the City of Colusa at the Colusa-Sacramento River State Recreation Area. Improvements include a boat ramp, parking, restrooms and a campground. The boat ramp is located on a side channel about fifteen hundred feet away from the main river channel. The channel between the boat ramp and the river is subject to siltation and requires frequent and expensive dredging to be kept open. During low flow periods the channel is often closed and the boat ramp is not usable. A local committee, supported by the City of Colusa, investigated this problem. Desired characteristics of a boat ramp site were that it not require complete new support facilities, be in close proximity to local businesses and not be seriously impacted by future channel meander. The State Department of Water Resources assisted this effort with an analysis of the hydraulic and geomorphologic characteristics of the area.

The City of Colusa City Council recently selected a site for a new boat ramp. It is located on City property that adjoins the river, at the mouth of the channel that connects to the current boar ramp. It is anticipated that construction funding will be requested in the future from either the California Department of Boating and Waterways or the Wildlife Conservation Board. It is also anticipated that the California Department of Parks and Recreation will maintain the relocated boat ramp facility.

D. Local Land Use Standards

The Colusa Subreach includes land within both Colusa and Glenn Counties. The portion of the Planning Area from RM 162 to 164.5 on the east side of the river is in Glenn County and the remaining majority of the Subreach is in Colusa County. All of the Glenn County area is unincorporated. Only a very small portion of the Colusa County area, a small strip, along the base of the levee, is within the City of Colusa. The remaining area in Colusa County, including the community of Princeton, is unincorporated area. For all practical purposes, the two counties administer the local land use controls within the Colusa Subreach.

Glenn and Colusa Counties have both adopted general plans and zoning ordinances to maintain basic land use controls. The Glenn County General Plan designates its respective portion of the Planning Area as “Intensive Agriculture” and the zoning district applied to the area is “AE-40” which establishes a minimum parcel size of forty acres. The Colusa County General Plan designates the majority of the Planning Area as “Designated Floodway” with the “Floodway” zoning district applied to the area. A small portion of the Planning Area, which includes the existing State Recreation Area and the Colusa Levee Park, are designated “Parks and Recreation” on the County General Plan. The existing general plan designations and the zoning preclude urban development within the Planning Area. The existing uses within the Planning Area (agriculture, habitat, flood control, water supply and recreation) appear to be consistent with the existing, local land use controls.

The Planning Area is also located entirely within the mapped area of the 100-year flood as established by the Federal Emergency Management Agency (FEMA). This FEMA designation is implemented through local floodplain management ordinances. These ordinances essentially preclude urban or otherwise intensive development inside of the flood control levees. This status is further strengthened by the jurisdiction of the State Reclamation Board, which has authority to review all substantive development within the flood control levees.